The data published by Teo *et al.*[5] are also interesting. This publication elegantly illustrates potential ethnic differences within Asian populations. In the same way, we have suggested that ethnicity factors could be different between African Americans and Africans.[4] These differences in ethnic coefficient within Asian populations are on a much smaller scale than the Japanese (0.808) and Chinese (1.233) coefficients that are currently being applied.

Given the extensive variation in ethnic backgrounds of patients with CKD, it may not be plausible to have a creatinine-based equation that will accurately model muscle mass per body surface area based on the ethnicity for every patient. Hopefully, with incorporation of additional biomarkers to determine CKD and CKD severity, the relative importance of race variables with creatinine-based equations will be less. For example, an elevated cystatin C level or albuminuria identifies the subset of patients with a creatinine-based estimated GFR <60 ml/min per 1.73 m^2 at risk for morbidity and mortality.[6] Misclassification with creatinine-based equations due to inaccurate modeling of muscle mass may be compensated by the use of additional test abnormalities to optimize CKD classification and staging.

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The hypothesis that type of species change depends on neutral-pH PD solutions

To the Editor: Peritonitis remains a common clinical problem for patients on peritoneal dialysis (PD). Srivastava *et al.*[1] conducted a randomized controlled study comparing the use of biocompatible and conventional solutions, and concluded that techniques using biocompatible PD solutions had clinically significant advantages in survival of peritonitis patients. We hypothesized that the type of species causing PD peritonitis would change depending on neutral-pH PD solutions.

In Japan, we have used neutral-pH PD solutions since April 2005. Thus, we examined the type of species causing PD peritonitis and evaluated these factors at Jikei Hospital before and after April 2005. As Srivastava *et al.* reported, there was no significant difference in peritonitis-free survival between using conventional and neutral-pH PD solutions (144 months vs. 173 months NS). However, the frequency of peritonitis caused by Gram-negative bacilli increased significantly after April 2005 (from 10.7% to 33.3%, $P=0.02$). The frequency of peritonitis caused by *Streptococcus* species also increased (from 12.5% to 33.3%, $P=0.05$). On the other hand, the frequency of peritonitis caused by *Staphylococcus* species did not change (Figure 1).

These results might indicate that the type of species causing PD peritonitis changes depending on neutral-pH PD solutions. It might thus be advisable to change the selection of antibiotics depending on PD solutions.

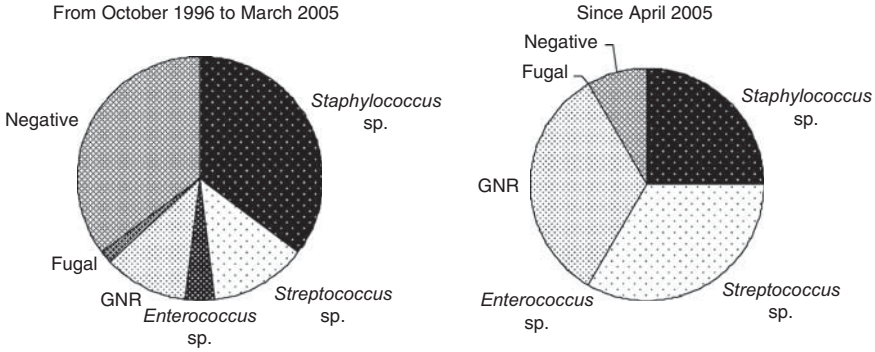

Figure 1 | The frequency of the type of species causing peritoneal dialysis (PD) peritonitis between before April 2005 and after. The differences of the type of species causing PD peritonitis before and after using neutral-pH PD solutions. The frequency of peritonitis caused by Gram-negative bacilli increased significantly after April 2005 (from 10.7% to 33.3%, $P=0.02$). The frequency of peritonitis caused by *Streptococcus* species also increased (from 12.5% to 33.3%, $P=0.05$). GNR, Gram-negative rod.

1. Srivastava S, Hildebrand S, Fan SL. Long-term follow-up of patients randomized to biocompatible or conventional peritoneal dialysis solutions show no difference in peritonitis or technique survival. *Kidney Int* 2011; **80**: 986–991.

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The Authors Reply: We appreciate the comments by Nakao *et al.*[1] in response to our publication.[2] In keeping with our results, their historical control study did not find any reduction of peritonitis rate after the introduction of biocompatible solutions. But, the most outstanding aspect to their report is the fact that their peritonitis rate was between 1 in 144 and 1 in 173 patient-months! With such excellent results, it is perhaps unrealistic to expect further reduction in peritonitis rate. Moreover, it is unclear from their letter whether all prevalent patients were switched to biocompatible solutions after April 2005 or whether only new incident patients were started on the newer solutions. If the latter is true, then an immediate reduction in overall peritonitis rate cannot be expected.

However, their finding of the bacterial species causing peritonitis change is intriguing. It raises several possibilities. Such a change may be unrelated to the introduction of biocompatible solutions; perhaps, there were other changes in clinical practice over the years. Equally, it is possible that they have noticed a change in the organisms causing peritonitis because of their very low infection rate—in our study, any impact of biocompatible solutions may have been overwhelmed by the high 'bacterial burden' experienced by our patients. To address this possibility, we have reanalyzed our data but selecting only patients with low risk of peritonitis.

We somewhat arbitrarily defined low-risk patients to be aged <55 years, non-diabetic, and non-HIV. These patients had a peritonitis rate of 1 in 37.7 vs. 1 in 40.0 patient-months (standard vs. conventional, $P=$ nonsignificant by χ^2). However, the proportion of patients with Gram-positive peritonitis was higher in the biocompatible group (30 out of 41 infections) than in the standard group (15 in 31 infections). This would appear to have reached statistical significance ($P=0.03$ by χ^2). However, this was not a prespecified secondary end point, and achieving a P-value of <0.05 after multiple analysis of data is unlikely to be significant. Moreover, Nakao found the opposite, i.e., after biocompatible solutions were introduced, they found that peritonitis from Gram-negative organisms increased.

Perhaps, we can only safely conclude that we must be cautious when interpreting historical-controlled studies or when performing multiple non-prespecified analyses of data. One hopes that the large multicenter Australian/New Zealand/South East Asia balANZ study that has been presented, but not yet published, will provide a more definitive answer to the hypothesis raised by Nakao *et al.*[1]

1. Nakao M, Yokoyama K, Tanno Y *et al.* The hypothesis that type of species change depends on neutral-pH PD solutions. *Kidney Int* 2012; **81**: 800–801.
2. Srivastava S, Hildebrand S, Fan SL. Long-term follow-up of patients randomized to biocompatible or conventional peritoneal dialysis solutions show no difference in peritonitis or technique survival. *Kidney Int* 2011; **80**: 986–991.

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